# DVCS analysis update for EG6 meeting

## Tuning the $^4He$ track parameters

- After the first and the second round comments, the $^4He$ track parameters have been tuned by looking at these parameters after the DVCS exclusivity cuts.
- In figure 1, I list the $^4He$ DVCS track parameters with the updated cuts.
- These cuts were applied to the following two analysis sets, except sdist cut on the old analysis set was [-3:3].

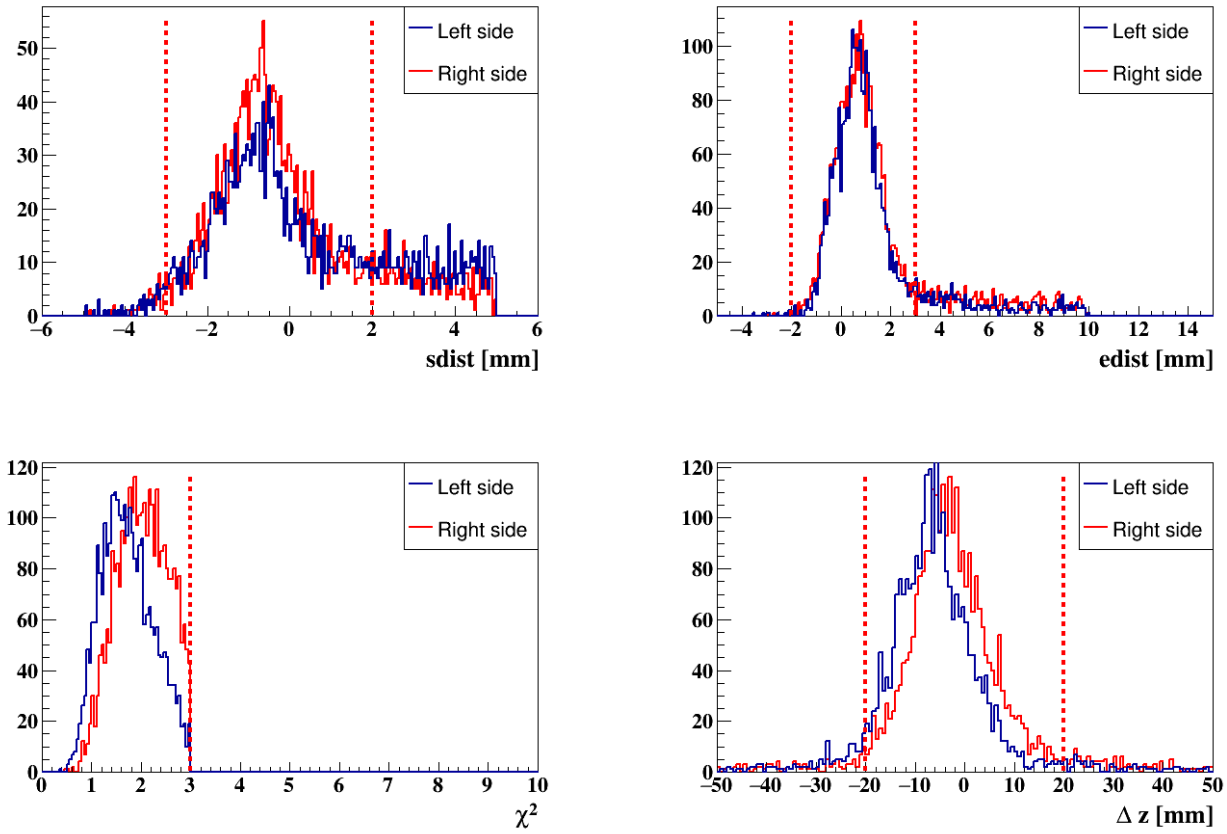


Figure 1: The distributions of the $^4He$ DVCS track parameters after applying the exclusivity cuts with the final cuts.

## Exclusive distributions and reconstructed $A_{LU}$

After the suggestion from the review committee, I have changed the cut one the missing energy to be from [-0.45, 0.5] instead of a $3\sigma$ cut on the distribution and refined all the other exclusive cuts. Figure 2 presents the old and the new distributions for the exclusive variables.

- Note in the following plots, I will label the two analysis sets as "old", 3 sigma cuts on all the variables, and "new", with the new missing energy cut and the corresponding updated 3 sigma cuts on the other variables.

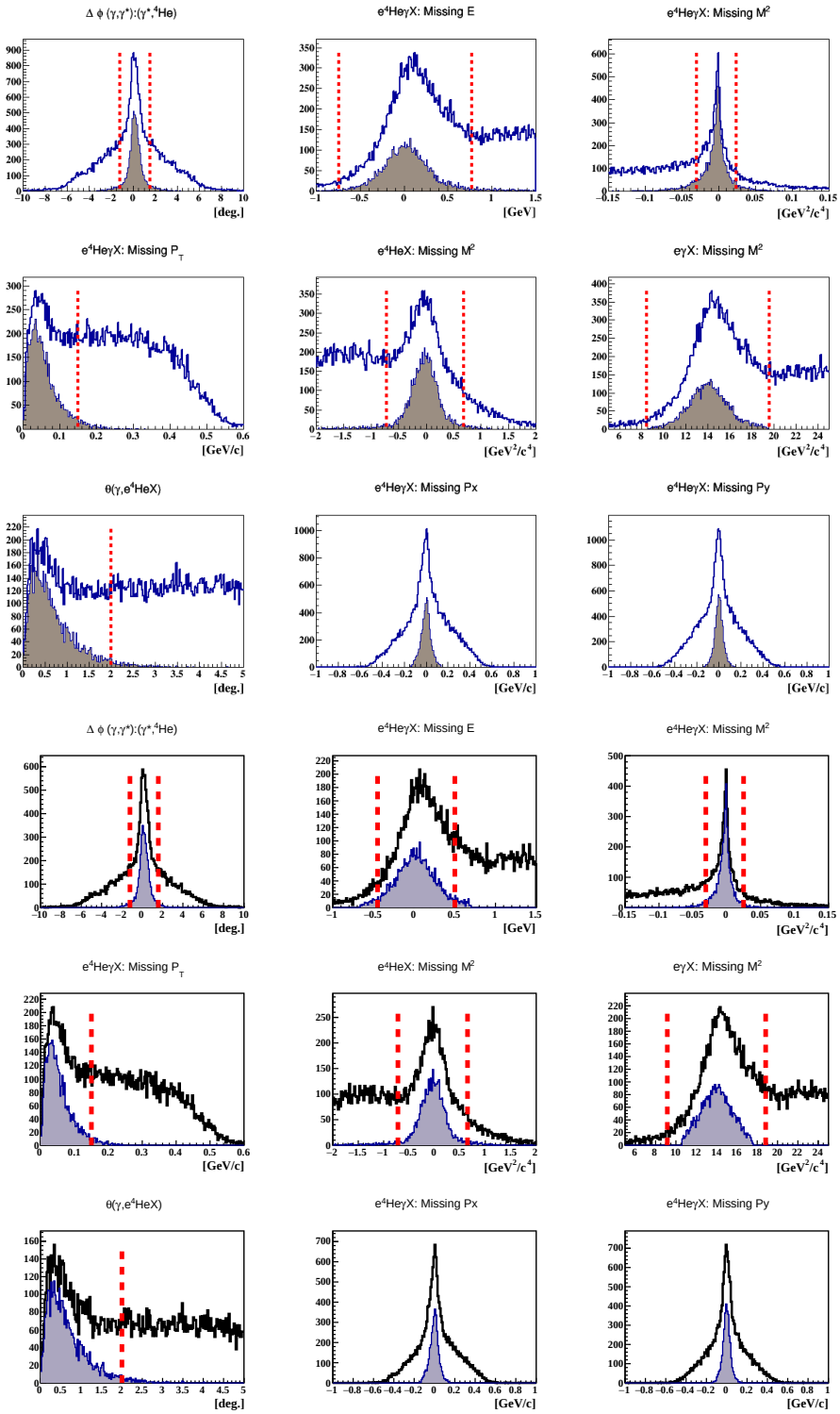
Δ ϕ (γ,γ*):(γ*,4He)
e4HeγX: Missing E
e4HeγX: Missing M2
[deg.]
[GeV]
[GeV2/c4]
e4HeγX: Missing PT
e4HeX: Missing M2
eγX: Missing M2
[GeV/c]
[GeV2/c4]
[GeV2/c4]
θ(γ,e4HeX)
e4HeγX: Missing Px
e4HeγX: Missing Py
[deg.]
[GeV/c]
[GeV/c]
Δ ϕ (γ,γ*):(γ*,4He)
e4HeγX: Missing E
e4HeγX: Missing M2
[deg.]
[GeV]
[GeV2/c4]
e4HeγX: Missing PT
e4HeX: Missing M2
eγX: Missing M2
[GeV/c]
[GeV2/c4]
[GeV2/c4]
θ(γ,e4HeX)
e4HeγX: Missing Px
e4HeγX: Missing Py
[deg.]
[GeV/c]
[GeV/c]

Figure 2:

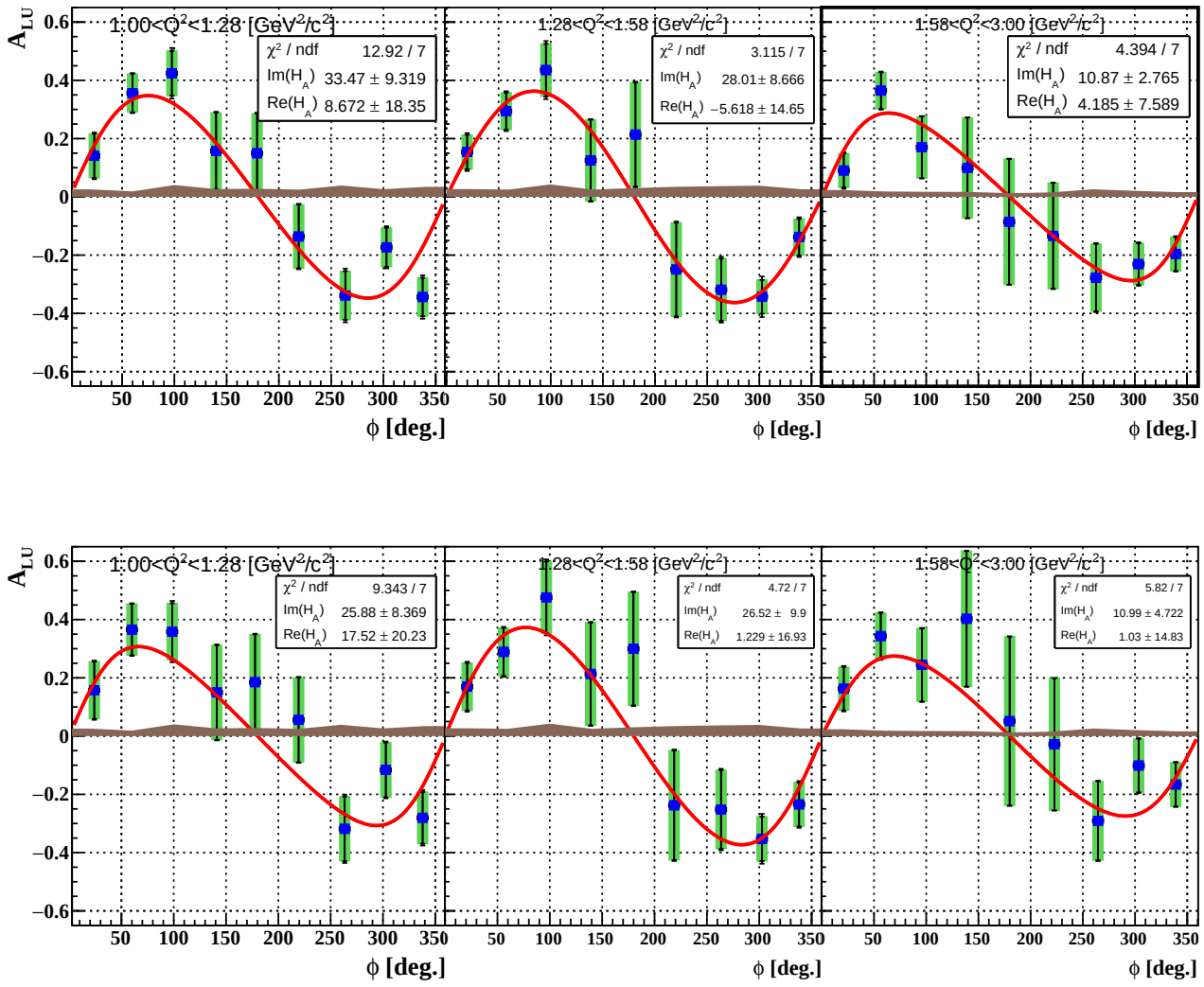


Figure 3: Coherent $A_{LU}$ as a function of $\phi$ in $Q^2$ bins for old (top) and new (bottom) selection sets.

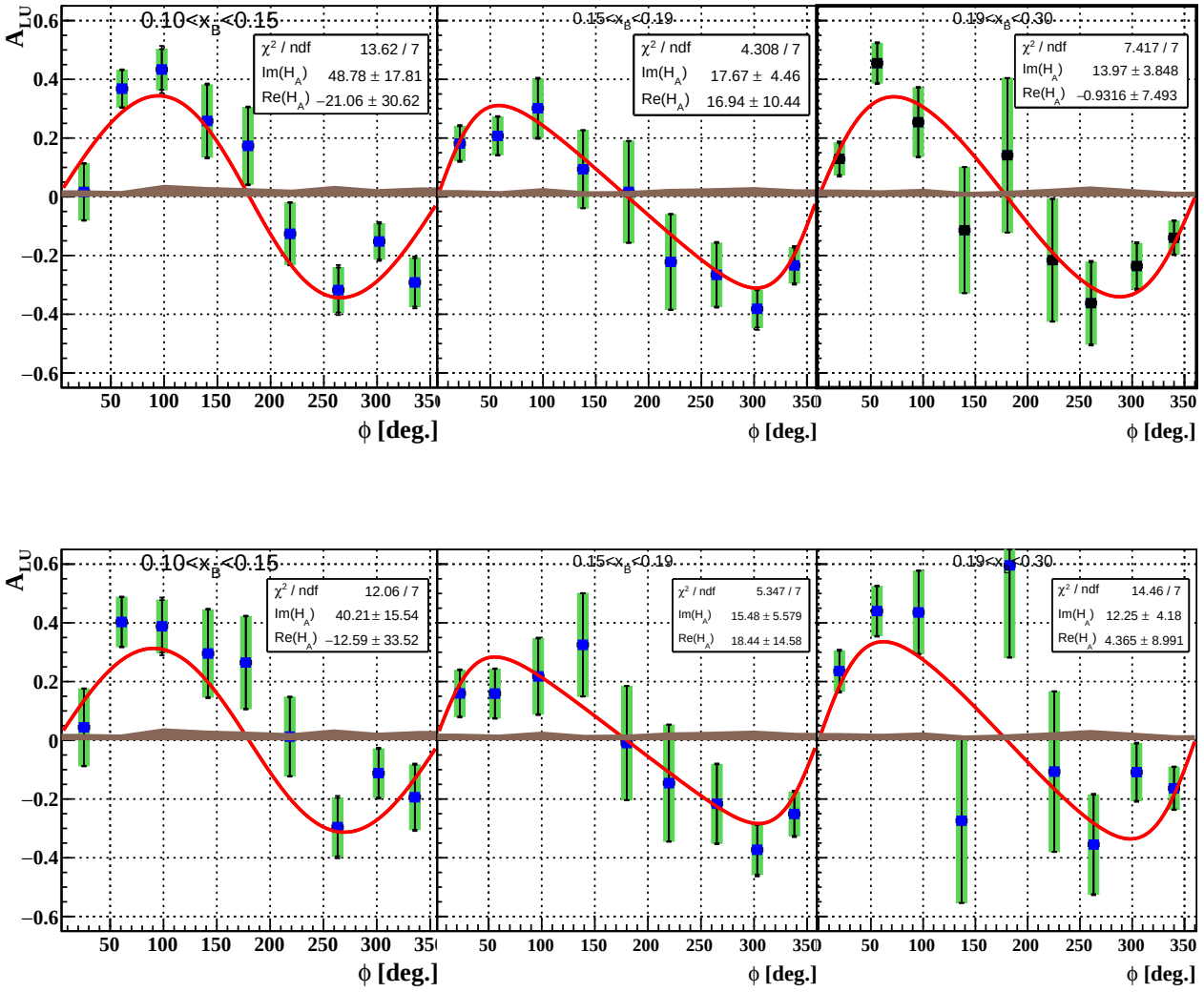


Figure 4: Coherent $A_{LU}$ as a function of $\phi$ in $x_B$ bins for old (top) and new (bottom) selection sets.

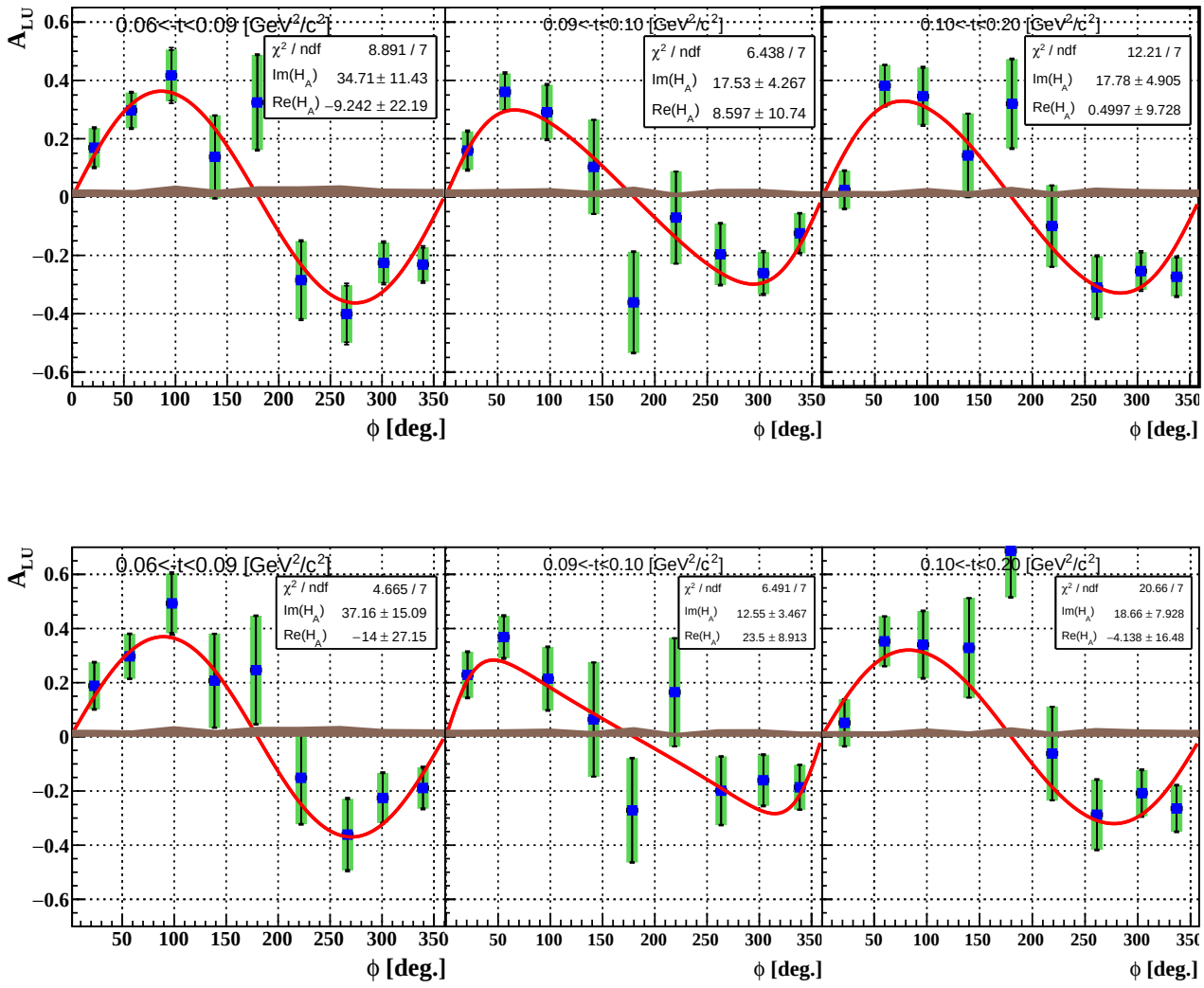


Figure 5: Coherent $A_{LU}$ as a function of $\phi$ in $-t$ bins for old (top) and new (bottom) selection sets.

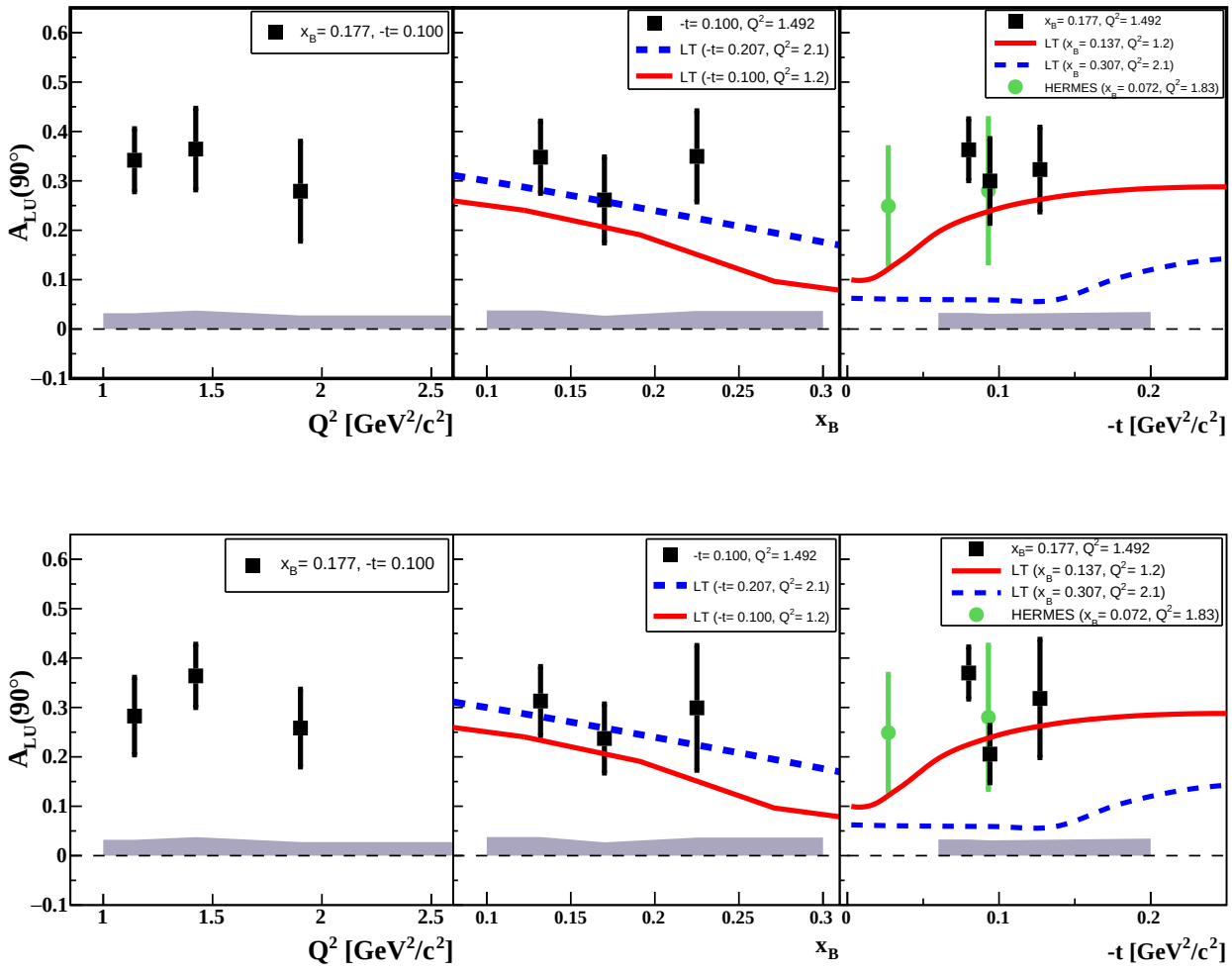


Figure 6: Coherent $A_{LU}$ at $\phi = 90°$ for old (top) and new (bottom) selection sets.

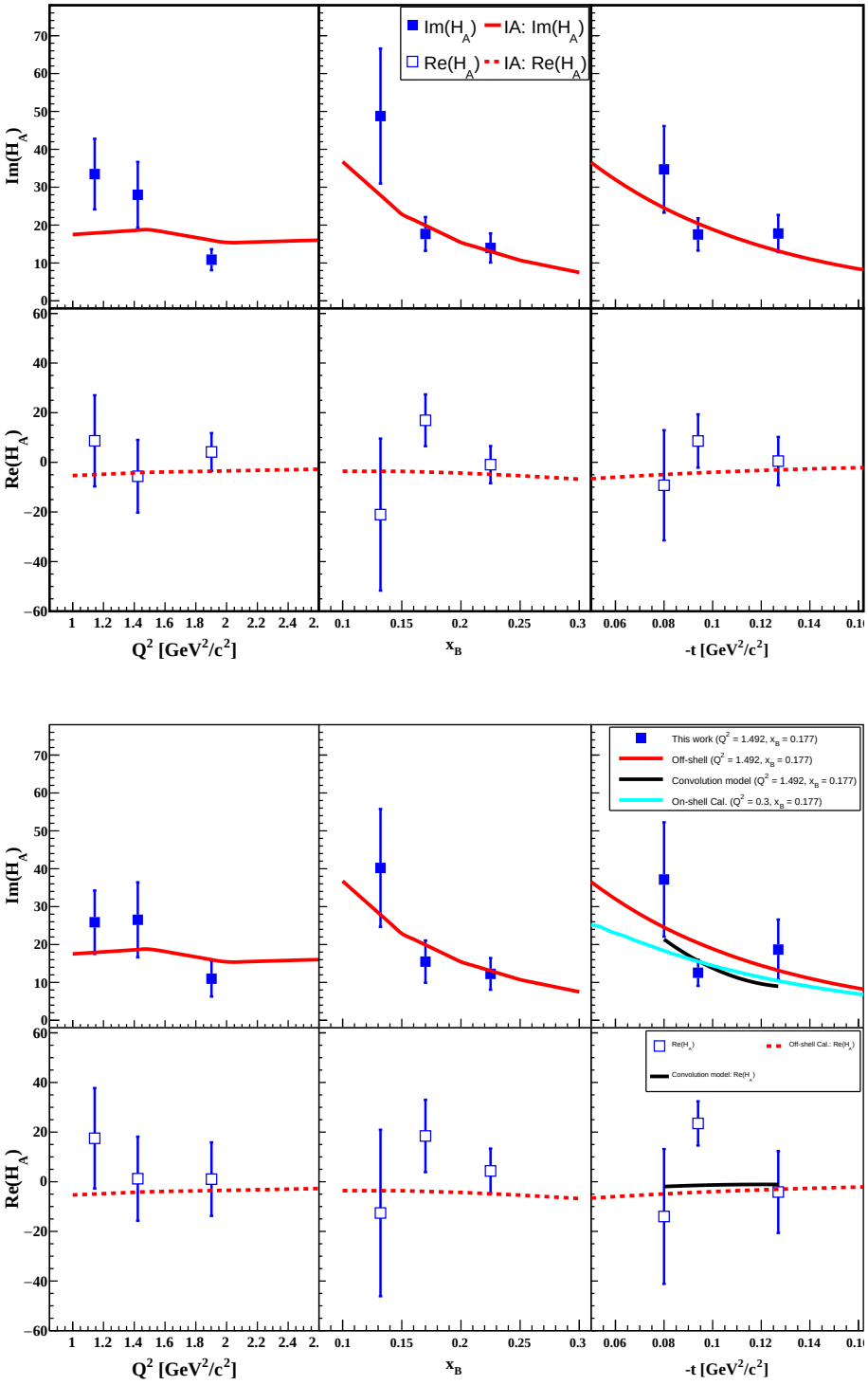


Figure 7: $H_A$ CFF from old (top) and new (bottom) selection sets.